234 *Entomotaxonomia* (2015) 37(3): 234–240, DOI: 10.11680/entomotax.2015034, ISSN 2095–8609

The genus *Idiotypa* Förster (Hymenoptera: Diapriidae) new to China with descriptions of two new species

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Abstract: The genus *Idiotypa* Förster, 1856 is recorded from China for the first time with descriptions and illustrations of two new species and one newly reported species: *Idiotypa septifoveata* Liu & Xu sp. nov. from Yunnan, *Idiotypa digita* Liu & Xu sp. nov. from Hainan, and *Idiotypa nigriceps* Kieffer, 1909 from Ningxia. A key to the Chinese species of the genus *Idiotypa* is given.

Key words: Diapriinae; Spilomicrini; parasitoids; taxonomy; key

异锤角细蜂属中国新纪录并记两新种（膜翅目：锤角细蜂科）

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摘要：首次报道异锤角细蜂属 *Idiotypa* Förster，1856 在我国分布，详细记述了 2 新种和 1 新纪录种，即：七凹异锤角细蜂 *Idiotypa septifoveata* Liu & Xu sp. nov.，分布云南；指突异锤角细蜂 *Idiotypa digita* Liu & Xu sp. nov.，分布海南；黑头异锤角细蜂 *Idiotypa nigriceps* Kieffer, 1909，分布宁夏；编制了中国异锤角细蜂属 *Idiotypa* 已知种检索表。

关键词：锤角细蜂亚科；斑锤角细蜂族；寄生蜂；分类；检索表

Introduction

Idiotypa Förster, 1856 is a small genus of the tribe Spilomicrini in the subfamily Diapriinae. It includes eleven previously known species in the world, of which four species are from the Palaearctic Region, four species from the Australian Region, one species from the Nearctic Region and two species from Neotropical Region (Kieffer 1916; Nixon 1980; Johnson 1992; Masner & García 2002). However, no species of this genus has been reported from the Oriental Region and in the Chinese fauna prior to this study. In recent years, during surveys of the Chinese Hymenoptera, some specimens of *Idiotypa* were found. They are described herein.

Material and methods

Examined specimens were collected by sweeping or by using yellow pan traps (YPT). All specimens are deposited in the Hymenopteran Collection of South China Agricultural

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Accepted 12 May 2015. Published 25 September 2015. Published online 22 September 2015.

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University, Guangzhou. For examination, an Olympus stereomicroscope was used. Photographs were made by a digital camera (Q-Imaging RTV) mounted on a Zeiss stereomicroscope and using Image-Pro Plus software.

Terminology follows that of Masner & García (2002). Abbreviations used in the text are: POL — postocellar line or shortest distance between both posterior ocelli; OOL — oculo-ocellar line or shortest distance between posterior ocellus and compound eye.

All type specimens are deposited in the Hymenopteran Collection of South China Agricultural University, Guangzhou (SCAU).

Taxonomy

Genus *Idiotypa* Förster, 1856

Idiotypa Förster, 1856: 122. Type species: *Psilus maritimus* Haliday, 1833, designated by Ashmead (1893).

Mionopria Haliday, 1857: 166. Type species: *Psilus maritimus* Haliday, 1833, by monotypy. An objective junior synonym of *Idiotypa* Förster.

Neopria Dodd, 1915: 398. Type species: *Neopria trifoveata* Dodd, 1915, by original designation. Synonymized by Masner (1965).

Idiotypa: Johnson, 1992: 172; Masner & García, 2002: 51.

Body length 1.0–3.5 mm. Body color usually pale, yellow to reddish-brown, less brown or black. Antennal shelf indistinct to distinct; toruli separated by gap. Antenna of female normally 12-segmented, clavate; of male 13-segmented, second flagellomere of male modified and with ventral carina. Malar sulcus present or absent. Epomia usually absent. Notauli complete, noncrenulate. Humeral sulcus present. Anterior scutellar pit usually tripartite. Posterior scutellar pit well developed. Median keel of propodeum usually developed, pointed to finger-shaped. Fore wing with venation distinctly exceeding basal half of wing length; radius nebulous, down-curved. Anterior margin of syntergite always deeply notched medially, or sometimes flexed.

Host. *Idiotypa nigriceps* Kieffer, 1909, reared from puparia of Phoridae (Notton in Masner & García 2002).

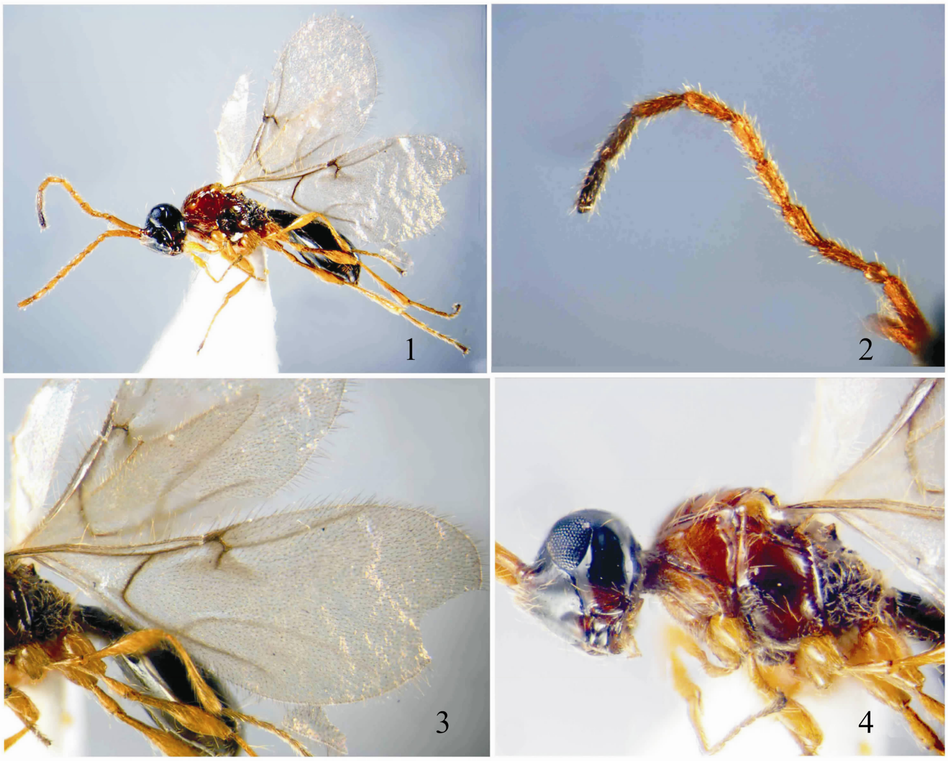
Distribution. Palaearctic, Australian, Nearctic and Neotropic Regions. Eleven species have been known worldwide. This is the first report of this genus from the Oriental Region and China, with two new species and one newly recorded species described herein.

1. ***Idiotypa septifoveata*** **Liu & Xu sp. nov.** (Figs. 1–4)

Male. Body length 2.3 mm; fore wing length 2.3 mm.

Description. Head. In dorsal view 2.0 times as wide as long. Mandible short and strong, bidentate. Clypeus small and narrow. Tentorial pits small and deep. Face smooth with sparse hairs. Malar sulcus present and deep. Eyes small and sparsely hairy. Eye height 1.1 times as long as the length of malar space. POL : OOL = 2 : 3. Temple rounded in dorsal view, 1.5 times as long as eye. Occipital carina complete. Antennal shelf indistinct; toruli separated by a gap. Antenna filiform, with eleventh to thirteenth segments missing; relative ratio of length to width of first to tenth segments as follows: 20 : 3, 5 : 4, 9 : 3, 9 : 3, 9 : 3, 9 : 3, 9 : 3, 9 : 3, 9 : 3, 9 : 3; second flagellomere modified, with ventral carina.

Mesosoma. Mesosoma short and stout. In dorsal view, prothorax with distinct cervix; pronotal shoulders rounded. Epomia absent. Mesoscutum moderately convex, smooth and sparsely hairy. Notauli complete, noncrenulate. Humeral sulcus present. Anterior scutellar pit with seven foveae, the median fovea largest, flanked by three smaller foveae on each side. Scutellar disc smooth and flat. Posterior scutellar pit well developed. Mesopleuron smooth, moderately convex, with some horizontal shallow grooves below tegula. Posterior margin of mesopleuron with row of crenulae. Dorsellum raised with three longitudinal carinae. Metapleuron coarsely reticulate rugose and densely hairy. Median keel of propodeum moderately developed, not pointed to finger-shaped. Polica of propodeum strongly developed, angular. Side of propodeum hairy.



Figures 1–4. *Idiotypa septifoveata* Liu & Xu sp. nov., male holotype. 1. Habitus, lateral view; 2. First to tenth antennal segments; 3. Fore wing; 4. Head and mesosoma, lateral view.

Wings. Fore wing rounded apically, with venation distinctly exceeding basal half of wing length. Costal vein, subcostal vein and basal vein tubular. Ratio of length of marginal vein, stigmal vein and postmarginal vein: 4 : 7 : 5. Radius nebulous and distinct.

Metasoma. Petiole subcylindrical, 1.5 times as long as wide in dorsal view, with short longitudinal keels and hairy ventrally. Anterior margin of syntergite with median longitudinal groove short and shallow, and two lateral longitudinal grooves long and deep. Fourth to seventh metasomal tergites ringlike.

Colour. Head black, with lower margin of malar space reddish-brown, mandibles dark-brown and palpi brownish-yellow. Antenna brown. Mesosoma reddish-brown. Legs brownish-yellow. Tegulae brownish-yellow. Wings hyaline, veins dark-brown. Metasoma black.

Female. Unknown.

Distribution. China (Yunnan).

Holotype. ♂, **China,** Yunnan, Tengchong, Mangbang Town, 24.91°N, 98.66°E, 23-V-2009, Jie ZENG, No. 200901912.

Diagnosis. This species is similar to *Idiotypa nigriceps* Kieffer, 1911, but it differs from the latter by malar sulcus present and deep (malar sulcus absent in *I. nigriceps*), anterior scutellar pit with seven foveae (tripartite in *I. nigriceps*).

Etymology. The specific epithet derives from the Latin prefix "septem" (meaning "seven") + "fovea" (meaning "pit") and refers to the anterior scutellar pit with seven foveae.

2. ***Idiotypa digita* Liu & Xu sp. nov.** (Figs. 5–9)

Holotype. Female. Body length 2.0 mm; fore wing length 1.8 mm.

Description. Head. In dorsal view 1.6 times as wide as long. Mandible short and strong, bidentate. Clypeus evenly convex, smooth. Tentorial pits small and deep. Face smooth with sparse hairs. Malar sulcus absent. Eyes small and sparsely hairy. Eye height 0.7 times as long as the length of malar space. POL : OOL = 1 : 2. Temple rounded in dorsal view, 1.2 times as long as eye. Occipital carina complete. Antennal shelf distinct; toruli separated by a gap. Antenna with 12 segments, clava 5-segmented; scape slender, weakly curved; pedicel gradually widening from base to apex; relative ratio of length to width of antennal segments as follows: 40 : 8, 14 : 8, 10 : 6, 7 : 7, 7 : 8, 7 : 8, 8 : 10, 7 : 13, 10 : 15, 9 : 16, 9 : 16, 15 : 14.

Mesosoma. Mesosoma short and stout. In dorsal view, prothorax with distinct cervix; pronotal shoulders rounded. Epomia absent. Mesoscutum moderately convex, smooth and sparsely hairy. Notauli complete. Humeral sulcus present. Anterior scutellar pit tripartite. Scutellar disc smooth and flat. Posterior scutellar pit well developed. Mesopleuron smooth, moderately convex, with some horizontal shallow grooves below tegula. Posterior margin of mesopleuron with row of crenulae. Dorsellum raised with three longitudinal carinae. Metapleuron coarsely reticulate rugose and densely hairy. Median keel of propodeum strongly developed, pointed to finger-shaped. Polica of propodeum strongly developed, angular. Side of propodeum hairy.

Wings. Fore wing rounded apically, with venation distinctly exceeding basal half of wing length. Costal vein, subcostal vein tubular. Basal vein nebulous but distinct. Ratio of length of marginal vein, stigmal vein and postmarginal vein: 5 : 5 : 3.

Metasoma. Petiole wider than long, subcylindrical, with short longitudinal keels and hairy ventrally. Anterior margin of syntergite with median longitudinal groove short and shallow, and two lateral longitudinal grooves long and deep. Fourth to seventh metasomal tergites ringlike. Apex of metasoma blunt.

Colour. Body dark-brown, with mandible, palpi and tegula brown. Wings hyaline, veins brown.

Male. Similar to female, but differs from female by: antenna filiform, with 13 segments; second flagellomere modified and with ventral keel; relative ratio of length to width of antennal segments as follows: 20 : 4, 5 : 4, 11 : 3, 11 : 4, 11 : 4, 11 : 4, 11 : 4, 11 : 4, 11 : 4, 11 :

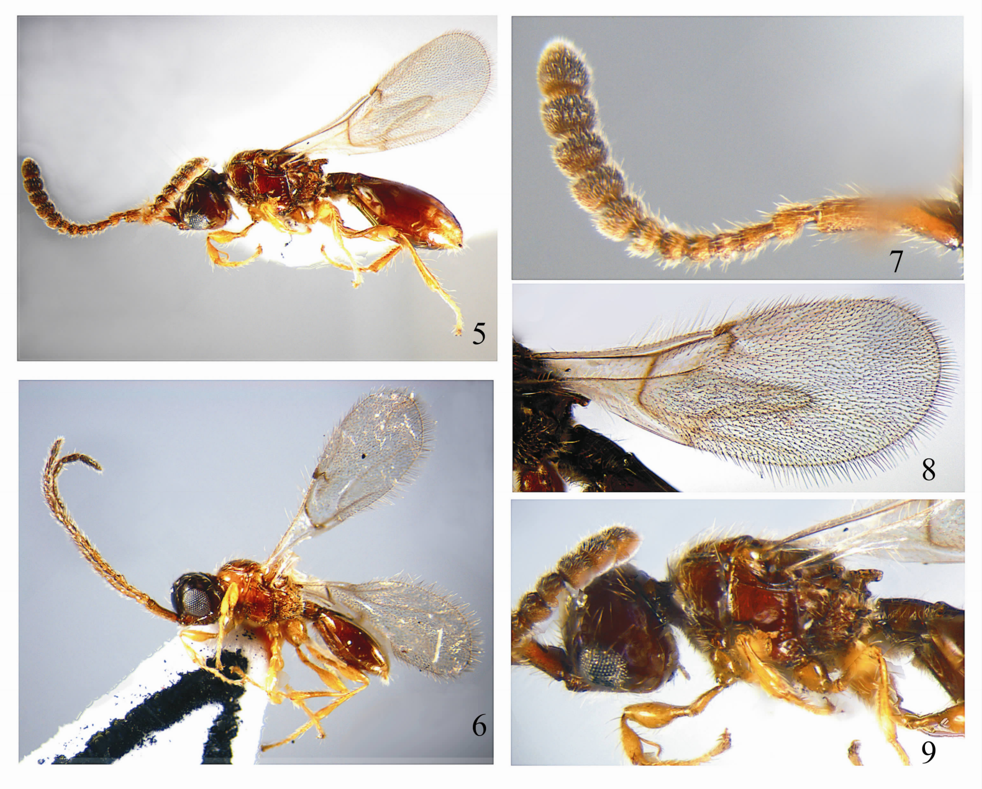
4, 11 : 4, 11 : 4, 15 : 4. Body brown, head black.

Holotype. ♀, **China,** Hainan, Mt. Diaoluoshan, 18.75°N, 51.13°E, 28–30-V-2007, Jingxian LIU, No. 200706564. **Paratype.** 1♂, same data as holotype, No. 200706666; 3♂, same locality as holotype, 12–13-VII-2010, YPT, Huayan CHEN, Nos. 201000107, 201000147, 2010001187.

Distribution. China (Hainan).

Diagnosis. This species is similar to *Idiotypa rufiventris* (Thomson, 1859), but it differs from the latter by antennal shelf distinct and strong (antennal shelf weak in *I. rufiventris*); fifth to twelfth antennal segments of male 2.7 times as long as wide (2.0 times in *I. rufiventris*); pedicel of female 1.7 times as long as wide (2.0 times in *I. rufiventris*) and body dark-brown (body black with metasoma reddish-brown in *I. rufiventris*).

Etymology. The specific epithet derives from the Latin noun "digitus" which means finger. It refers to the character of the median keel of the propodeum.



Figures 5–9. *Idiotypa digita* Liu & Xu sp. nov. 5, 7–9. Female holotype; 6. Male paratype. 5, 6. Habitus, lateral view; 7. Antenna; 8. Fore wing; 9. Head and mesosoma, lateral view.

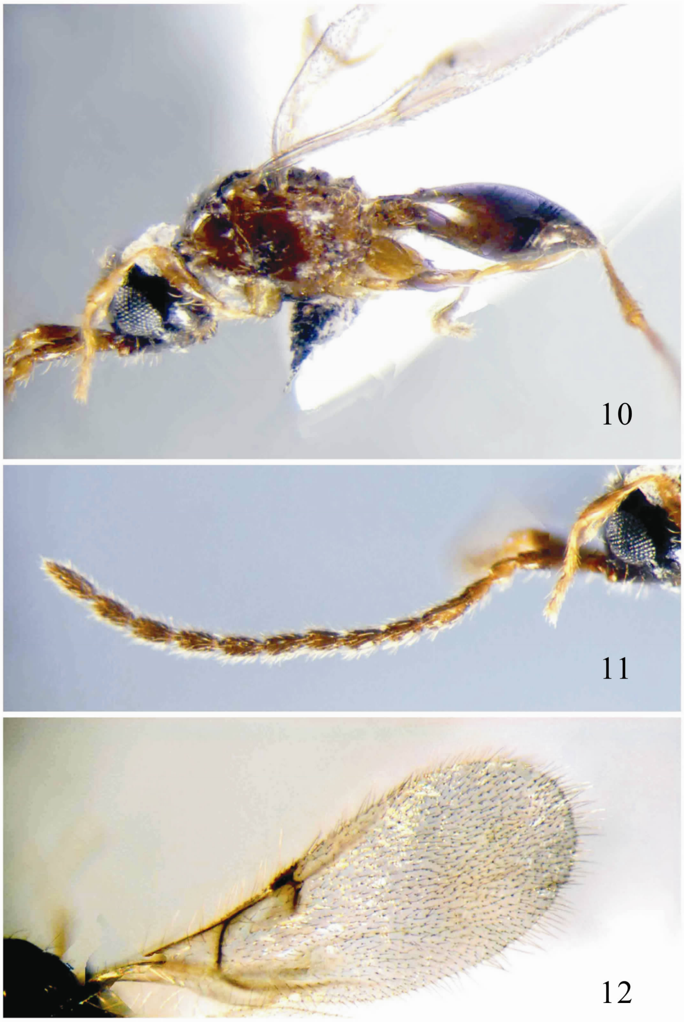
3. ***Idiotypa nigriceps*** **Kieffer, 1909** (Figs. 10–12), new record to China

Idiotypa nigriceps Kieffer, 1909: 386.

Idiotypa nigriceps: Kieffer, 1911: 814; Kieffer, 1916: 49; Nixon, 1980: 14.

Specimens examined. 1♂, **China,** Ningxia, Mt. Liupanshan, 03–18-VII-2009, YPT, Huayan CHEN, No. 200903243.

Distribution. China (Ningxia); Sweden; the United Kingdom.



Figures 10–12. *Idiotypa nigriceps* Kieffer, male. 10. Habitus, lateral view; 11. Antenna; 12. Fore wing.

Key to the species of the genus *Idiotypa* from China

1. Median keel of propodeum finger-shaped; malar sulcus absent; metasoma reddish brown·····*I. digita* sp. nov.
-. Median keel of propodeum normal; malar sulcus present or absent; metasoma blackish brown to black········2
2. Anterior scutellar pit with three foveae; malar sulcus absent ·· *I. nigriceps* Kieffer
-. Anterior scutellar pit with seven foveae; malar sulcus present ······································*I. septifoveata* sp. nov.

Acknowledgements

We are grateful to Prof. Lubomír Masner of the Canadian National Collection of Insects, for his kind help during our study of Diapriidae from China. This study was supported by the National Natural Science Foundation of China (31272351).

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